

TECHNICAL INFORMATION ON BUILDING MATERIALS
FOR USE IN THE DESIGN OF LOW-COST HOUSING

TIBM - 7

THE NATIONAL BUREAU OF STANDARDS
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THERMAL INSULATION

Comparative Insulating Values of 8" Solid Brick Walls
Having Various Types of Interior Finishes

This is a brief presentation of calculated thermal insulating values of 8" solid brick walls, having various common types of interior finishes, based on tests conducted by the National Bureau of Standards and presented in detail in former Letter Circular 227, "Thermal Insulation", (April 19, 1927);¹ and Bureau of Standards Research Paper No. 291, "Heat Transfer through Building Walls", (August 6, 1930),² by M. S. Van Dusen and J. L. Finck.

¹Out of print.

²Out of print and not available by purchase but may be consulted in Government depository libraries.



COMPARATIVE INSULATING VALUES OF 8" SOLID BRICK WALLS
HAVING VARIOUS TYPES OF INTERIOR FINISHES

| Wall | Interior Finish | Insulating Values ¹ Wall Plus Finish |
|----------------|---|--|
| | 7/8" Furring, 3/4" Plaster and Metal Lath ² | 3.4 |
| | 7/8" Furring, 1/2" Plaster Board or Wall Board without Plaster ³ | 3.5 |
| | 7/8" Furring, 1/2" Rigid Insulation Board without Plaster ^{3,4} | 4.6 |
| | 1/2" Rigid Insulation Board, ⁴ 7/8" Furring, 3/4" Plaster and Metal Lath ² | 4.9 |
| | 1/2" Rigid Insulation Board, ⁴ 7/8" Furring, 1/2" Plaster Board or Wall Board without Plaster ³ | 5.0 |
| | 1/2" Rigid Insulation Board, ⁴ 7/8" Furring, 1/2" Rigid Insulation Board without Plaster ^{3,4} | 6.1 |
| 8" Solid Brick | 1/2" Flexible Insulation, ⁵ 7/8" Furring, 3/4" Plaster and Metal Lath ² | 5.3 |
| | 1/2" Flexible Insulation, ⁵ 7/8" Furring, 1/2" Plaster Board or Wall Board without Plaster ³ | 5.3 |
| | 1/2" Flexible Insulation, ⁵ 7/8" Furring, 1/2" Rigid Insulation Board without Plaster ^{3,4} | 6.4 |
| | 7/8" Furring (air space filled with flexible insulation), 3/4" Plaster and Metal Lath ² | 5.6 |
| | 7/8" Furring (air space filled with flexible insulation), 1/2" Plaster Board or Wall Board without Plaster ³ | 5.6 |
| | 7/8" Furring (air space filled with flexible insulation), 1/2" Rigid Insulation Board without Plaster ^{3,4} | 6.8 |
| | 2" Furring (air space filled with flexible insulation), 3/4" Plaster and Metal Lath ² | 9.8 |
| | 2" Furring (air space filled with flexible insulation), 1/2" Plaster Board or Wall Board without Plaster ³ | 9.8 |
| | 2" Furring (air space filled with flexible insulation), 1/2" Rigid Insulation Board without Plaster ^{3,4} | 11.0 |

¹The insulating value is defined as the number of hours required for the passage of 1 Btu of heat through 1 square foot of wall area, per degree Fahrenheit temperature difference between the air on one side of the wall and the air on the other.

²If wood lath is used, add 0.19.

³If 1/2" plaster is applied to board, add 0.22.

⁴If 3/4" or 1" rigid insulation board is used, add 0.75 and 1.51 respectively.

⁵If 3/4" or 1" flexible insulation is used, add 0.93 and 1.85 respectively.

